

PATENT
Atty Docket No. 1006-018/MMM

Remarks

Claims 1-30 are in the application. Reconsideration is requested.

~~Claims 1-30 are rejected under 35 USC 102(e) for anticipation by Abend~~
~~(US Pat. No. 4,266,094).~~ Applicant responds as follows.

With respect to independent claims 1, 11, 20, and 29, the Examiner cites Abend as disclosing a multimedia speaker system having a bass equalization circuit with dynamically adjusted and frequency response. The Examiner specifically references Fig. 2 of Abend and the filter associated with amplifier 42.

Applicant notes that a rejection for anticipation requires that the cited reference disclose each and every feature recited in the claim. A rejection for anticipation is improper and should be withdrawn if the cited reference fails to disclose any feature recited in the claim.

Applicant notes that Abend does not show a multimedia speaker system with a speaker driver for transducing into sound an audio electrical signal. In fact, Abend does disclose any speaker or speaker system at all. Abend is directed to an electronic speech processing system in which:

the final output from the system of FIG. 2, which is taken across output terminal 92, and common terminal 94, may now be provided to conventional utilization devices, such as an audio amplifier or a transmitter-receiver system--where in the latter instance the signal may be used e.g. to modulate a transmitter. (Abend, col.; 4, lines 11-15.)

Accordingly, Abend fails to teach or suggest that the electronic speech processing system is included in a multimedia speaker system having a speaker driver. Moreover, Abend leads one skilled in the art away from incorporating the speech processing system into a multimedia speaker system by stating that the output connections are connected to "conventional utilization devices, such as an audio amplifier or a transmitter-receiver system." Applicant submits, therefore, that the rejections of independent claims 1, 11, 20, and 29 are improper and

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should be withdrawn because the cited reference fails to teach or suggest a multimedia speaker system with a speaker driver.

Furthermore, independent claim 1 recites "a dynamic bass equalization circuit with a second or higher order active filter having a dynamically adjusted gain and frequency response that vary with the amplitude of the audio electrical signal." Claims 11, 20, and 29 recite analogous subject matter. As described in the application with reference to one implementation, "the dynamic bass equalization circuit includes a Sallen-Key high pass filter that includes an amplifier with a real-time negative feedback path. The dynamically adjusted frequency response is provided by a parallel pair of reversed diodes that are connected in the negative feedback path." (Application page 3, lines 5-12.) An example of such an implementation is shown in Fig. 2, in which dynamic bass equalization circuit 20 includes a second order Sallen-Key high pass filter 50 with a parallel pair of reversed diodes 52 and 54 coupled across a real-time negative feedback path. As is known in the art, a second order filter provides frequency dependent filtering at about -12dB/octave .

In the implementation described above, the dynamically adjusted gain and frequency response recited in the claim are provided by a parallel pair of reversed diodes (52, 54) that are connected in the negative feedback path.

With increased output voltages, the voltage across resistor 80 will also increase and current will be conducted across diodes 50 and 52, thereby reducing the net impedance between output 74 and negative input 78. A reduction in the gain K will also reduce the quality factor Q of the circuit, thereby providing dynamic frequency response modification.
(Application page 6, lines 22-27.)

In contrast, the filter associated with amplifier 42 in Fig. 2 of Abend includes a pair of reversed diodes that are outside the feedback path of the amplifier in a simple clamp configuration. With the reversed diodes of Abend outside the feedback path of amplifier 42, the system of Abend provides no teaching or suggestion of an active filter with a dynamically adjusted gain and frequency response. Applicant submits, therefore, that the rejections of independent claims

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1, 11, 20, and 29 are improper and should be withdrawn because the cited reference fails to teach or suggest an active filter with a dynamically adjusted gain and frequency response.

Moreover, claims 1 and 11 recite that the dynamic bass equalization circuit has an active filter of second or higher order. As is known in the art, a second order filter provides frequency dependent filtering at about -12dB/octave . (Application page 5, lines 27-28.) In addition to providing no teaching or suggestion of an active filter with a dynamically adjusted gain and frequency response, Abend does not even mention such an active filter as being of second or higher order. Applicant submits, therefore, that the rejections of independent claims 1, and 11 are improper and should be withdrawn because the cited reference fails to teach or suggest an active filter of second or higher order.

For the foregoing reasons, applicant submits that the rejections of independent claims 1, 11, 20, and 29 are improper and requests that the rejections be withdrawn. The rejections of claims 2-10, 12-19, 21-28, and 30 should likewise be withdrawn as dependents of the patentably distinct independent claims. Moreover, claims 4-7, 9, 10, 12-16, 18, 19, 21-25, 27, 28, and 30 are additionally patentably distinct for the following reasons.

Claims 4-7, 12-16, and 21-25 recite either a negative feedback path that includes a parallel pair of opposed diodes or dynamically adjusted gain and frequency response that are provided by a parallel pair of reversed diodes. As described in the application, dynamically adjusted gain and frequency response are provided by a parallel pair of reversed diodes that are in a negative feedback loop. Abend shows in Fig. 2 a filter associated with amplifier 42 having a pair of reversed diodes that are outside the feedback path of the amplifier in a simple clamp configuration. Accordingly, Abend does not teach or suggest a negative feedback path that includes a parallel pair of opposed diodes or dynamically adjusted gain and frequency response that are provided by a parallel pair of reversed diodes. Applicant submits, therefore, that claims 4-7, 12-16, and 21-25

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are further patentably distinct from the cited reference and that the rejections of these claims should be withdrawn.

Claims 9, 10, 18, 19, 27, and 28 recite that a bass equalized audio signal is delivered to a sub-woofer speaker driver or a full-range speaker driver. Abend does not show any speaker driver, much less the specific sub-woofer speaker driver or full-range speaker driver recited in the claims. Instead, Abend is directed to an electronic speech processing system in which:

the final output from the system of FIG. 2, which is taken across output terminal 92, and common terminal 94, may now be provided to conventional utilization devices, such as an audio amplifier or a transmitter-receiver system—where in the latter instance the signal may be used e.g. to modulate a transmitter. (Abend, col. 4, lines 11-15.)

Applicant submits, therefore, that claims 9, 10, 18, 19, 27, and 28 are further patentably distinct from the cited reference and that the rejections of these claims should be withdrawn.

Applicant believes the application is in condition for consideration and respectfully requests the same.

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Respectfully Submitted,



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